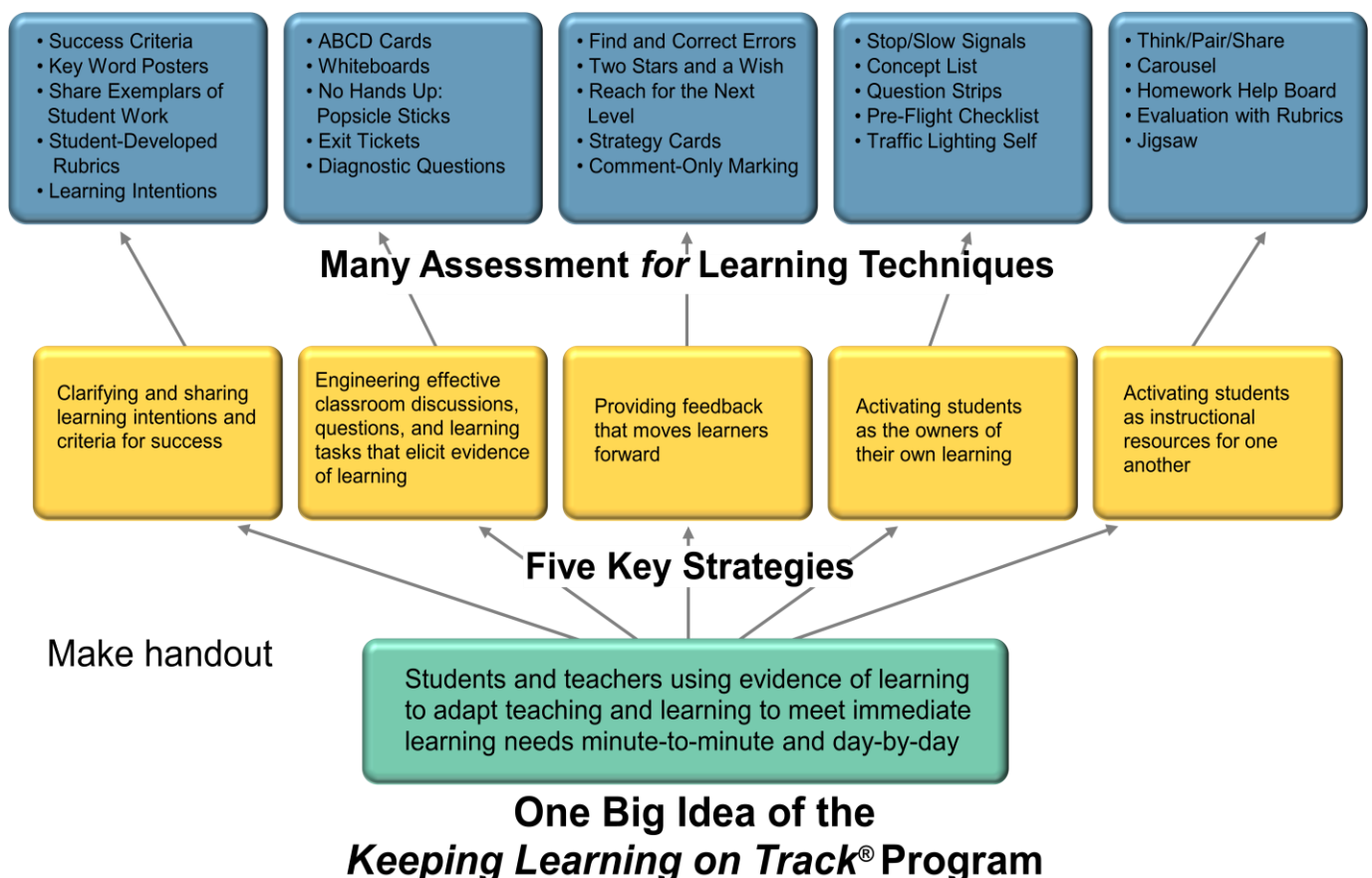


# The Keeping Learning on Track Program

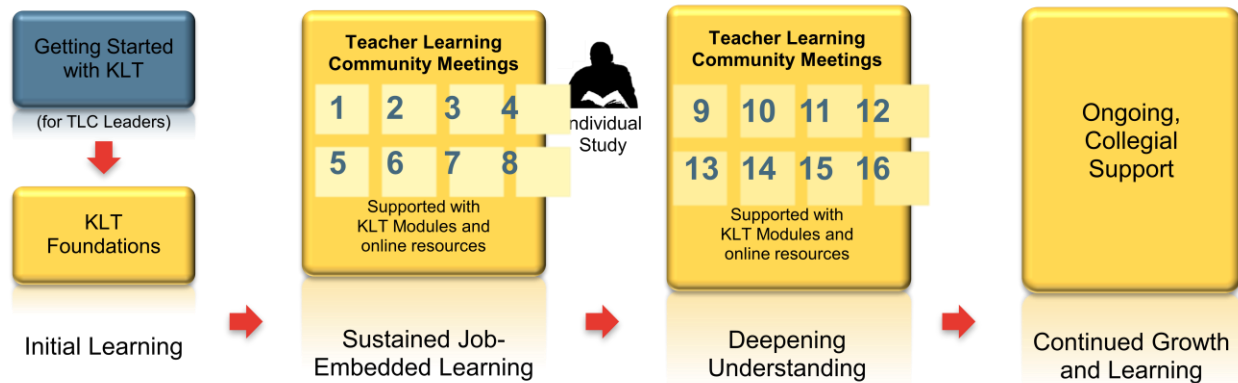
## Overview & Research

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### Keeping Learning on Track Framework



# Keeping Learning on Track Implementation



## Formative Assessment Definitions

- Brookhart & Moss (2010) – Formative assessment is an active and intentional learning process that partners the teacher and the students to continuously and systematically gather evidence of learning with the express goal of improving student achievement.
- Heritage (2010) – Formative assessment is a process that takes place continuously during the course of teaching and learning to provide teachers and students with feedback to close the gap between current learning and desired goals.
- Wiliam (2009) – An assessment functions formatively to the extent that evidence about student achievement elicited by the assessment is interpreted and used to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions that would have been taken in the absence of that evidence.

# Research behind KLT

## READING 1

**When teachers identify and share learning expectations with their students, students better support each other and take responsibility for their own learning.**

Both quantitative and qualitative **research** supports the notion that students need to understand what they are learning and how they will be assessed to support one another effectively and develop a sense of autonomy.

Specifically, White and Frederiksen (1998) investigated a science curriculum that provided scaffolded activities for inquiry, reflection, and generalization. Part of this curriculum involved a reflective process during which students were introduced to a set of criteria for characterizing good scientific research. These criteria were used by the students to assess their own and each other's work. Two middle school teachers implemented the curriculum with a total of eight classes and were compared to a control teacher with four classes. The authors found that in order for students to engage in reflective self- and peer-assessment, they needed to understand first the assessment criteria, in this case the criteria for characterizing good scientific research. With this understanding, students in the experimental group were able to meaningfully assess their own work and their peers' work.

Tell et al. (2000) reported similar results from the implementation of a standards-based instructional system. Forty-four secondary school teachers and college faculty were followed for a two-year period. Qualitative data including teachers' journal entries, classroom artifacts (e.g., assignments, assessments, and student work), survey responses, and transcripts from team meetings and focus groups were collected and analyzed. From the analysis and triangulation of this data, the authors found that teachers who shared learning expectations with students by using scoring rubrics; explaining standards, criteria, and expectations; and working with the students to develop student-friendly learning goals reported that the process put their students at the center of the learning process, helped students continually monitor their own progress, and made the students more accountable for their own work.

In general, students must understand what they are expected to learn before they can take responsibility for their own learning. In many instances, students have incorrect conceptions of what they are learning, why they are learning it, and what quality work looks like.

KLT provides teachers with practical classroom techniques to help them clearly identify and share the intended learning and criteria for success with students. This enables students to better understand what teachers expect them to know, understand, or be able to do, as well as

what constitutes a proficient performance. This allows students to support each other and take responsibility for their own learning by helping them accurately and appropriately evaluate learning against shared expectations and make any necessary adjustments to the learning.

## READING 2

**When teachers engineer classroom environments to regularly elicit evidence of student understanding, students may be more engaged.**

**Research** has found that multiple methods of eliciting evidence of student understanding (e.g., higher-order questions, wait time, all student responses systems) are effective for increasing student engagement. For example, Tobin and Capie (1982) investigated the use of higher-order questions in conjunction with increased wait time and its effect on student engagement in 13 middle school classrooms. Teachers in the study were provided with guidance in the choice of higher-order questions, the enhancement of wait time, or both. Students in each of the classrooms were then observed for engagement (e.g., attending to a task, responding to questions, collecting data, explaining information) and academic achievement. The researchers concluded that both the use of higher-order questions and increased wait time significantly contributed to increases in student engagement.

When investigating their data-based problem-solving approach to instruction, Jones and Krouse (1988) found that students in the experimental classrooms showed lower rates of off-task behavior. Again, this approach encourages student teachers to collect data on student learning, develop hypotheses to explain obstacles, and make changes to instruction to address the obstacles and reexamine student progress.

In a research synthesis examining the relationship between classroom evaluation practices and student outcomes, Crooks (1988) reported similar findings for the use of higher-level questions and student interest. More specifically, Crooks (citing Rosenshine & Stevens, 1986) suggested that the use of questions to actively engage a high percentage of students may explain the positive relationship that is generally found between increased use of classroom questioning and student achievement. The author suggested that to obtain the full benefit, classroom questions should be directed to as many students as possible.

**In general**, many classroom discussions consist of lower-order questions that are answered by a few motivated students. These questions are not rich enough to provide detailed information about student learning and responses are not systematically collected from all students in the class.

**KLT** provides teachers with practical classroom techniques that more effectively elicit evidence of student learning by requiring all students in the class to deeply engage with the content by encouraging teachers to develop higher-order thinking questions, requiring all students to think about each classroom question (even if only one or two students will respond), and collecting

responses simultaneously from all students. These techniques increase the engagement of all students rather than just those that typically raise their hands.

## READING 3

**When teachers give students feedback to promote thinking, identify specific areas for improvement, and provide time, students act on the feedback to improve their work.**

The KLT model assumes that for feedback to effectively improve student learning, the student must act on such feedback. The view is supported throughout the literature. For feedback to be effective, two things must occur: (1) feedback must identify any gaps between a desired learning goal and the student's present status towards that learning goal and (2) students must take action to close that gap (Black & Wiliam, 1998; Ramaprasad, 1983; Sadler, 1989).

Although there is limited empirical evidence that shows that students who are provided with quality feedback (e.g., feedback that promotes thinking and identifies specific areas of improvement) and time to respond will act on that feedback, recent research on the process-writing approach (Patthey-Chavez, Matsumara, & Valdes, 2004) found that middle school students were not likely to revise and further develop their writing unless provided with feedback from the teacher. Additionally, the authors found that as more feedback was provided by the teacher, more improvements were made between drafts indicating that students did respond to the feedback they received. There is literature, however, that supports a direct link between the provision of feedback and improved student learning.

**Research** by Elawar and Corno (1985) investigated the degree to which written constructive feedback provided by teachers affected student achievement. Eighteen sixth-grade teachers were trained to provide constructive comments on math homework assignments, which included suggestions on how to improve and guidance toward corrections. Results show that when accompanied by specific comments on errors, written praise had a positive impact on student achievement. Students provided with specific comments had higher scores on achievement posttests than students in the control groups.

Bangert-Drowns et al. (1991) discussed the impact of feedback by examining 58 effect sizes from 40 reports. The authors focus on how feedback empowers active learners with strategically useful information, supports self-regulation, and the characteristics of feedback that seem especially effective in inducing adjustment strategies. These studies of feedback measured post treatment performance on achievement tests. On average, feedback made a positive contribution to achievement, raising scores by about one fourth of a standard deviation. However, the type of feedback provided impacted the effect sizes observed. Feedback that in some way informed the learner of the correct answer had a higher effect than feedback that only indicated when a response is incorrect.

Nyquist (2003) supported the fundamental idea that feedback that provides information regarding gaps in student knowledge and information on how to reduce those gaps produced the most substantial gains in students' knowledge. In his review of 86 research articles on the effects of feedback on learning outcomes, the author examined 95 studies (which included a total of 12,920 research participants) and calculated 185 effect sizes. The results of a multiple regression show a pattern of progression. In other words, the more consistent the feedback with the definition above, the better the result. Effect sizes ranged from 0.16 for weaker feedback to 0.51 for stronger feedback.

**In general**, the current climate of accountability has resulted in feedback that explicates students' current level of achievement rather than providing the student with explicit guidance for improvement.

**KLT** provides teachers with practical classroom techniques that provide students with feedback to move learning forward and create structures for students to reflect on and formatively use feedback to further understanding. This allows students to take responsibility for their own learning by telling students not just what needs to be done to improve, but also providing specific details, time, and structure for students to use feedback to move their own learning forward.

## **READING 4**

**When teachers structure opportunities for students to self-regulate their learning, students take responsibility for their own learning.**

**Research** on the self-regulation of learning, including self-assessment and self-monitoring, indicates that students who engage in these activities are more likely to develop internal attributions, a feeling of empowerment, and a sense of autonomy.

Specifically, Fernandes and Fontana (1996) established a training program of self-assessment strategies with 25 primary school teachers. Over a period of eight months, these teachers implemented these strategies within their classrooms. Students in these classrooms were compared to students in the classrooms of 20 control teachers. Results indicated that students who are provided with regular opportunities and encouragement to engage in self-assessment are more likely to attribute their learning to internal beliefs, that is, students believe they can have an impact on their own learning. These students were less likely to attribute success to luck or other unknown variables and were more likely to identify the real causes of academic success (learning, effort, etc.). Similarly, McDonald and Boud (2003) trained teachers in self-assessment practices. Specifically, teachers were trained to construct, validate, and evaluate criteria to apply to student work. Teachers then worked with students to encourage the application of given criteria to their own work. Students engaged with these self-assessment practices were surveyed. Responses indicated that students felt that this program allowed them to be introspective, independent, and empowered (98%, 98%, and 82%, respectively).

Brookhart et al. (2004) examined the impact of student self-monitoring on 41 students in two classrooms. Students were provided with structures and tools (logs, graphs, reflection sheets, etc.) to reflect each week on the success of their study and problem-solving strategies. An analysis of student reflection sheets showed that when teachers involved their students in monitoring their own progress, students were more autonomous and were able to accurately predict their performance on timed tests. Overall, the students in this study enjoyed participating in self-assessment and liked seeing their progress. Student comments on their reflection sheets also acknowledged the value of their own studying.

**In general**, in many classrooms the students are a passive audience. For students to become actively engaged with the learning process, they need guidelines and opportunities to learn and engage in self-assessment.

**KLT** provides teachers with practical classroom techniques to design opportunities for students to think reflectively and metacognitively about their own learning as well as to assess their own work and learning. This allows students to take responsibility for their own learning by engaging students in the process of thinking about, assessing, and acting on evidence of their own learning.

## **READING 5**

**When teachers provide structures and create opportunities to activate students as instructional resources for one another, students support each other.**

**Research** has shown that students can more effectively support one another when they are provided with explicit structures, guidance, and routines for working collaboratively.

King (1992) found high school and college students were more likely to be self-directed and autonomous in their learning when provided with a structured activity. The activity used starter prompts to stimulate students to generate and answer thought-provoking questions pertaining to the lesson content. Students using starter prompts were compared to students participating in a similar activity without that guidance. Additionally, students working individually were compared to those working in groups. The authors found that not only were those students who were provided with guidance more autonomous, but when peers collaborated to answer the posed questions they outperformed students who worked individually on course assessments. The authors hypothesized that the students' discovery of their own and each other's misconceptions, motivation to ask more difficult questions, to provide one another with more elaborate answers, and the opportunity to examine the material from multiple perspectives contributed to this result.

Two additional studies investigated interventions designed to provide students with structures and explicit guidance for collaborative work in science (Mercer et al., 2004) and general reasoning (Mercer et al., 1999). These two interventions provided primary teachers with lesson plans that involved teacher-led activities, group discussions, and whole class sharing sessions.

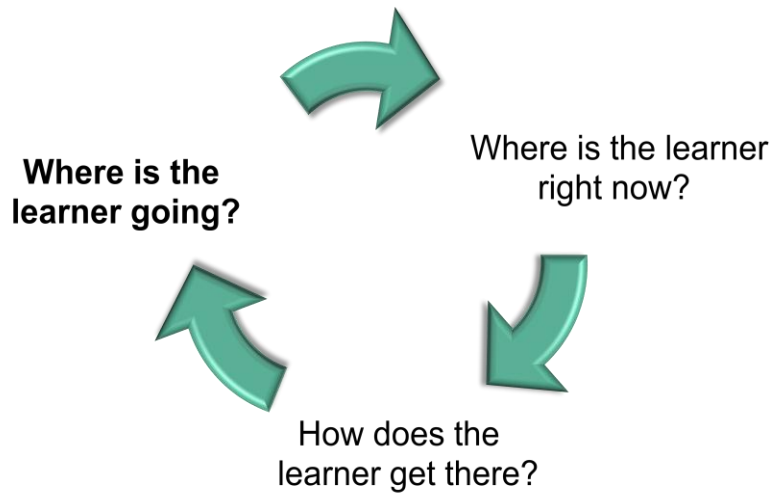
One focus of the intervention was to help students to work together, establish ground rules, and use exploratory talk for either scientific or general reasoning. Students in these classes were compared to control classes. Using qualitative and quantitative analyses of discourse, the authors found that the structures provided in this program enabled children to work together more effectively and improve their language and reasoning. Additionally, students were able to work together more effectively; were better prepared for individual reasoning tasks; and were more likely to ask each other for information and opinions, seek reasons and provide them, share thoughts, evaluate proposals, and challenge ideas. The authors concluded that “the teachers in the project schools created talk-focused classrooms in which the children are each other’s resource” (Mercer et al., 2004, p. 374).

**In general**, collaborative learning is difficult to organize and implement effectively. Strategies that provide opportunities for students to engage in learning activities and effectively support one another are needed.

**KLT** provides teachers with practical classroom techniques that provide structured opportunities for students to support each other in the learning process by looking for evidence of learning in each other’s work, providing peers with feedback to move learning forward, and using multiple problem-solving approaches or perspectives. These structures and processes require students to act as instructional resources for one another.



# Formative Assessment Process



	Where is the learner going?	Where is the learner right now?	How does the learner get there?
<b>Teacher</b>	Clarifying and sharing learning intentions and criteria for success	Engineering effective classroom discussions, questions, & learning tasks that elicit evidence of learning	Providing feedback that moves learners forward
<b>Learner</b>	Understanding learning intentions and criteria for success	Activating students as the owners of their own learning	
<b>Peer</b>	Understanding and sharing learning intentions and criteria for success	Activating students as instructional resources for one another	

# Teacher Learning Communities

## TLC Modules

Year 1	Year 2
<ul style="list-style-type: none"><li>• Teachers Working Together</li><li>• Starts and Ends of Lessons</li><li>• Formative Feedback</li><li>• Characteristics of Quality Hinge-Point Questions</li><li>• Developing Quality Hinge-Point Questions</li><li>• If I Tell Them What I Expect, They Just Might Do It</li><li>• Activating Students and Their Peers</li><li>• Looking Back, Look Forward</li></ul>	<ul style="list-style-type: none"><li>• Classroom Contract</li><li>• All Lessons Lead to Learning</li><li>• The Question-Answer-Action Loop: The Question</li><li>• The Question-Answer-Action Loop: The Answer</li><li>• The Question-Answer-Action Loop: The Action</li><li>• Record Keeping Systems in Support of Student Learning</li><li>• Differentiated Instruction in a KLT Classroom</li><li>• Look Back, Look Forward</li></ul>